

New York State Department of Transportation

Yellow Flag NB2358W011

By: Alex Abreu

Flag Date: May 05, 2023

Superseding Information:

No Flags Superseded

Structure Information

BIN: 1065318

Feature Carried: 278I278IX2M23027

Feature Crossed: 6TH AVENUE

Orientation: 8 - NORTHWEST

Region: 11 - NEW YORK CITY

County: KINGS

Political Unit: City of NEW YORK

Approximate Year Built: 1962

Posted Load Matches Inventory : Yes

Bridge Load Posting (Tons) : Not Posted for Load

Primary Owner: New York State Department of Transportation

Primary Maintenance Responsibility: 12 - State - Subcontracted to another Party

Typical or Main Span Type: 3 - Steel, 02 - Stringer/Multi-Beam or Girder

This Bridge is not a Ramp

Number of Spans: 322

Verbal Notification Information

Person Notified: Heinz Joachim, P.E.

Date: May 12, 2023 12:30:00 PM

Of: NYSDOT Region 11

Signature Information

Signature: Alex Abreu, P.E. 099761-1

Date: May 21, 2023

Reviewed By: Robert Kemp

Date: May 22, 2023

Attachments: 7

Flagged Elements

Parent Element	Element	Total Quantity	Unit
Span Number : 290			
	113 - Steel Stringer	1562	ft

Flagged Condition Description

This Yellow Flag No. NB2358W011 is NEW.

Location: Span 290, Stringer S1 at end side of Floorbeam FB3 above the center lane of Hamilton Avenue WB roadway near 15th Street.

Description:

The end of Stringer S1 in Span 290 at the end side of Floorbeam FB3 exhibits severe section loss for the full height of the web along the connection angle with 0.12"-0.25" remaining thickness measured (RTM), resulting in approximately 38% to 70% section loss with average 54% section loss for full stringer web height. The stringer web exhibits two corrosion holes adjacent to the connection angle for 5"H x 2"W in the upper web and 2-1/2"L x 1"-2-1/2"H in the lower web. The overall shear web area section loss is approximately 61%. Four rivets at the left face of the stringer exhibits section loss for 25% in two rivets at the upper web and 50%-75% in two rivets in the lower web. Two rivets at the right face of the stringer exhibits 25% section loss in the lower web. The right side bottom flange exhibits 10"L x 3"W corrosion hole at the edge of the flange with 30% section loss surrounding the hole followed by 20% section loss for the full width of the flange for 12" long. The left connection angle exhibits 25% section loss for full height of connection angle with 20%-40% bolt loss. The right connection angle exhibits no significant defects. (refer to Flag Condition Sketch Photo #2 for more details)

This is a newly flagged condition.

Notes:

1. The above flagged stringer is curb stringer that is a built up steel channel member with bottom flange located on the right side of the stringer and does not receive direct live load, but supports the barrier/railing above on I278.
2. The other end of the above flagged stringer is located at the begin side of Floorbeam FB4 and has newly installed steel reinforcement plates and angles.
3. Adjacent Stringer S2 exhibits no significant defects.
4. A double lane closure in the left and center lanes on WB roadway and 125ft manlift are required to access this location.
5. The previous 2021 Biennial Inspection report did not have any defects documented at the above flagged stringer.

Flag Photographs

Photo Number: 1

Photo Filename: 23_Flag Location Plan.jpg

Gowanus Expressway
2023 Biennial Inspection - Field Sketch

BIN: 1065318

Team: AA/TS

Date: 05/05/2023

Span: 290

Location: Stringer S1 at Floorbeam FB3

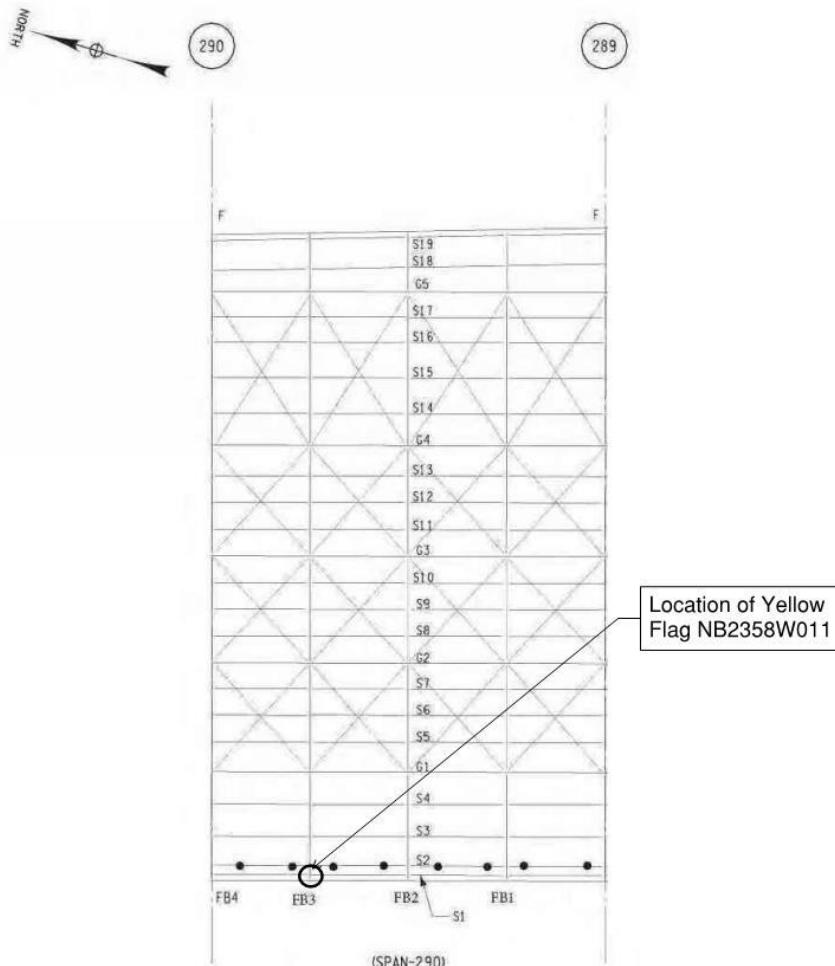
Yellow Flag Location Plan**WSP****Attachment Description: Flag Location Plan**

Photo Number: 2

Photo Filename: 23_Span 290_Floorbeam FB3_Stringer

Gowanus Expressway
2022 Biennial Inspection - Field Sketch

BIN: 1065318

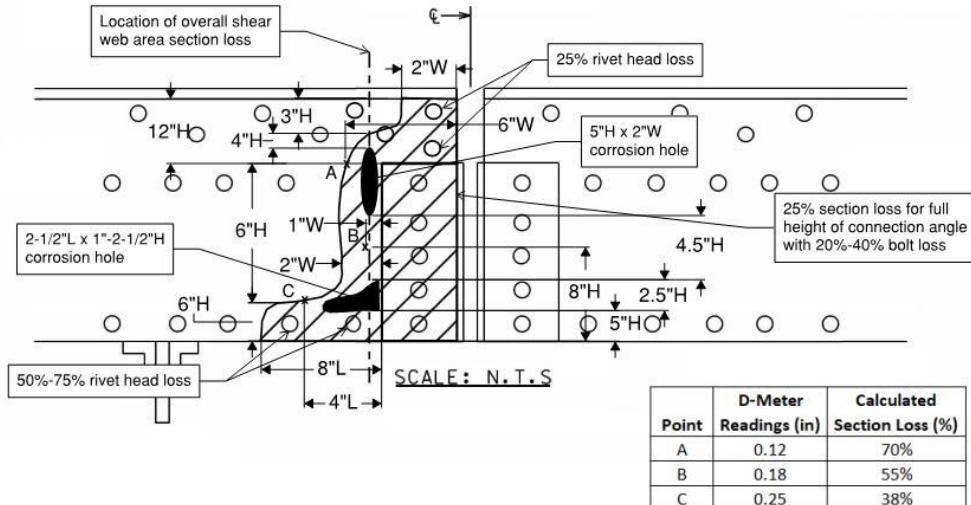
Team: AA/TS

Date: 05/05/2023

Span: 290

Location: Stringer S1 at Floorbeam FB3

Left Face of Stringer S1



Overall Shear Web Area Section Loss:

Shear web area:
5''x0.25''[Point C]+2.5''x0''[Corrosion hole]+4.5''x0.18''[Point B]+5''x0''[Corrosion hole]+4''x0.12''[Point A]+3''x0.40''=3.74 in²

Overall shear web area section loss:
 $((24''x0.40'')-3.74\text{ in}^2)/(24''x0.40'') \times 100 = 61\%$

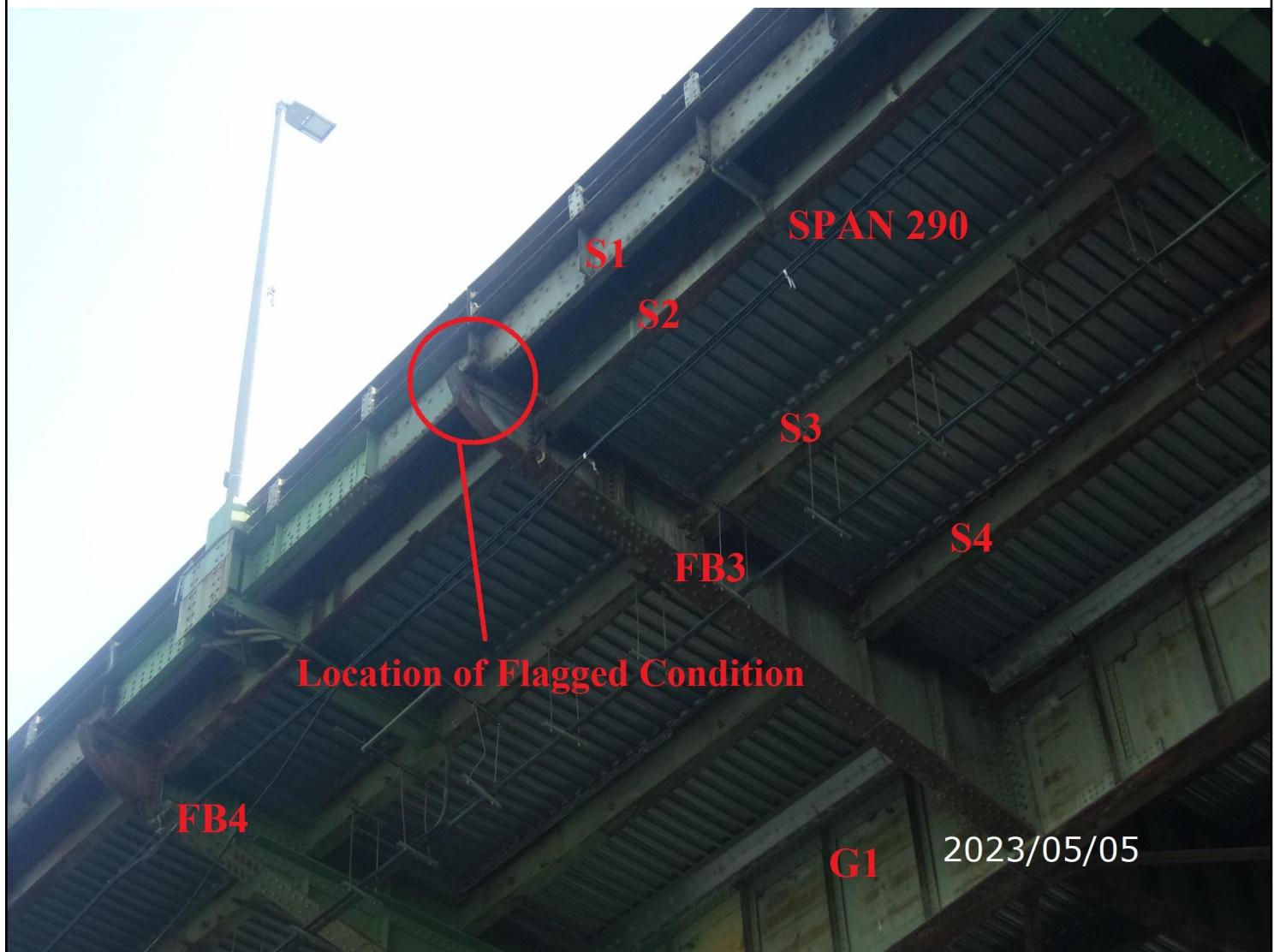
Notes:

- As-measured web thickness is approximately 0.40".
- Stringer S1 is a steel channel member. The bottom flange of the channel member is located at the right side. The bottom flange exhibits 10''L x 3''W corrosion hole at the edge of the flange with 30% section loss surrounding hole followed by 20% section loss for full width of flange for 12''L. (Not shown in sketch since left face of stringer has full web height of curb stringer with readings taken at left face)
- Section Loss Calculations:
Point A: $(0.40''-0.12'')/0.40''=70\%$
Point B: $(0.40''-0.18'')/0.40''=55\%$
Point C: $(0.40''-0.25'')/0.40''=38\%$
Average Section loss: $(70\%+55\%+38\%)/3 = 54\%$

Attachment Description: Flag Condition Sketch

Photo Number: 3

Photo Filename: 23_113_7001.jpg



Attachment Description: General view of the flagged condition at Stringer S1 on the end side of Floorbeam FB3 in Span 290. Looking End and Right.

Photo Number: 4

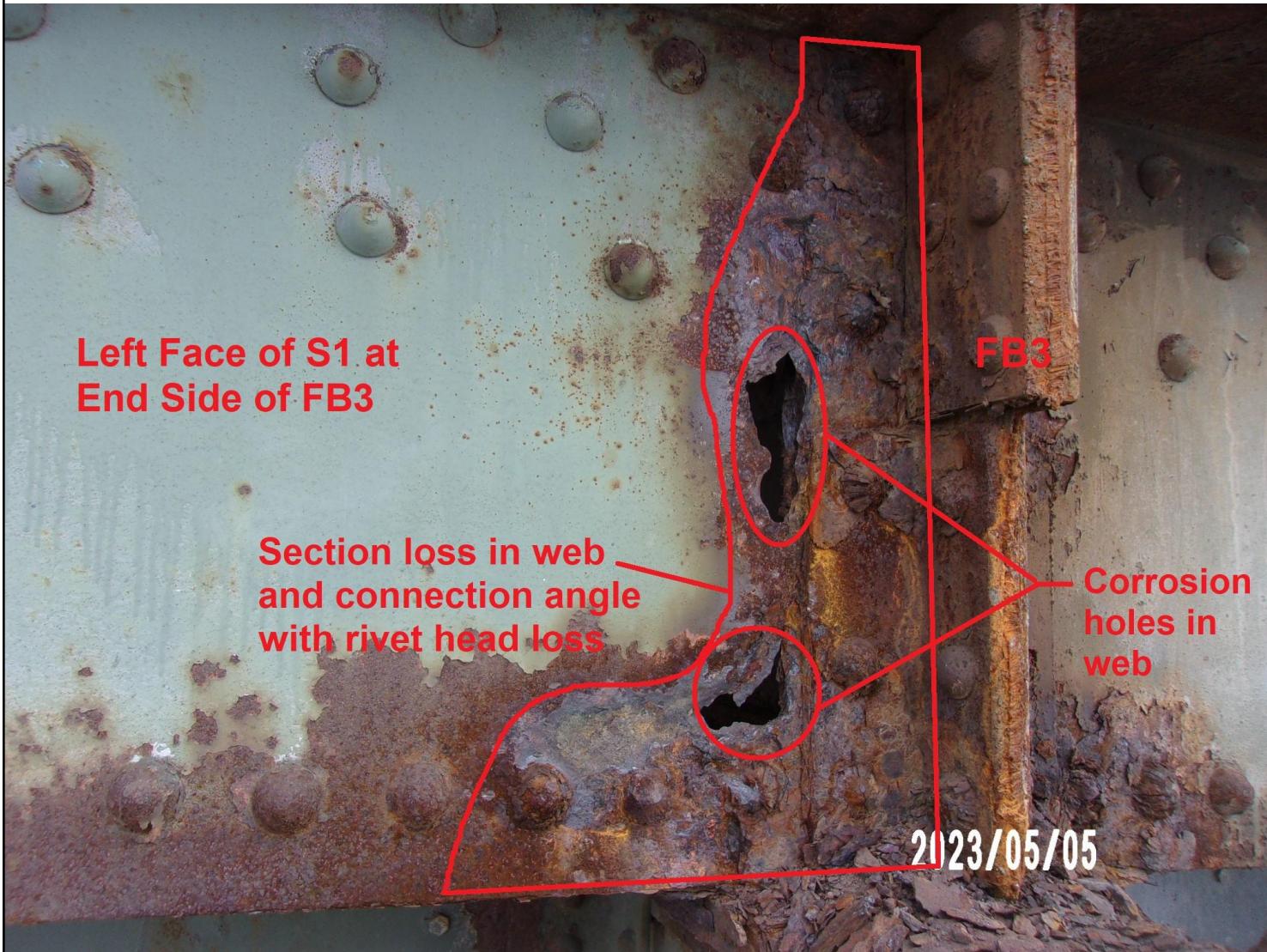
Photo Filename: 23_113_6906.JPG



Attachment Description: Close up general view of the flagged condition at Stringer S1 on the end side of Floorbeam FB3 in Span 290. Looking Begin and Right.

Photo Number: 5

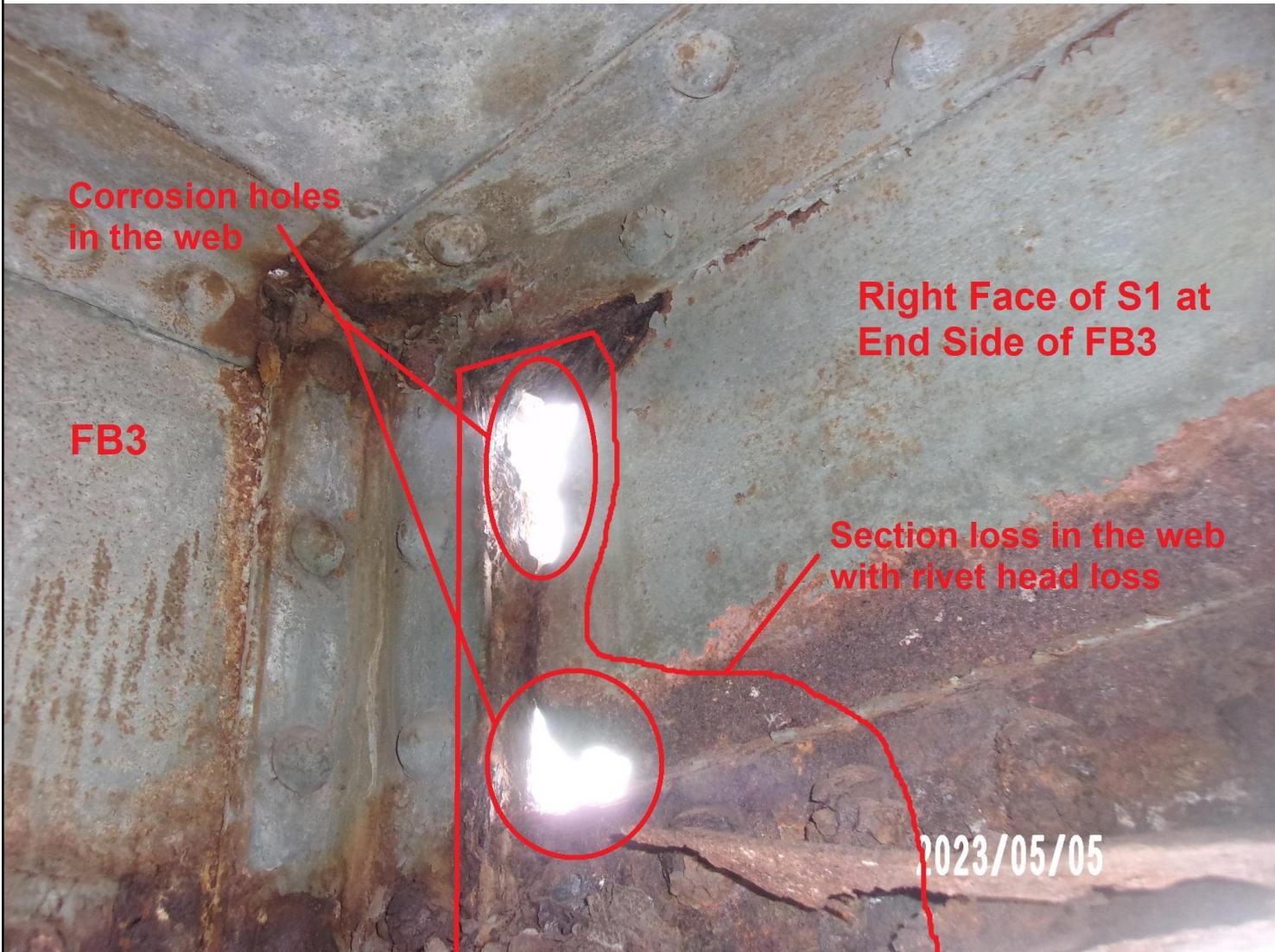
Photo Filename: 23_113_6897.JPG



Attachment Description: The left face of Stringer S1 at the end side of Floorbeam FB3 in Span 290. The stringer exhibits severe section loss with two corrosion holes in the web with rivet head loss in the upper and lower web. Also, the connection angle exhibits section loss for the full height with bolt loss. Looking Right.

Photo Number: 6

Photo Filename: 23_113_6898.JPG



Attachment Description: The right face of Stringer S1 at the end side of Floorbeam FB3 in Span 290. The stringer exhibits severe section loss with two corrosion holes in the web with rivet head loss in the lower web. Looking Begin and Left.

Photo Number: 7

Photo Filename: 23_113_6900.JPG



Attachment Description: The bottom of Stringer S1 at the end side of Floorbeam FB3 in Span 290. The right side bottom flange exhibits corrosion hole at the edge with section loss surrounding the hole. Looking Begin.